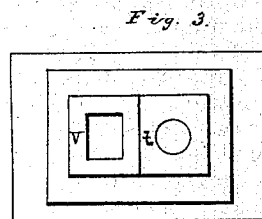
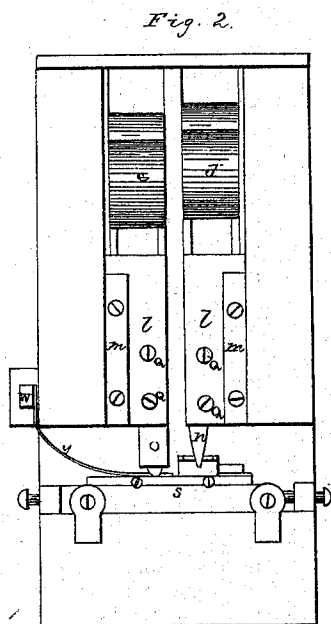
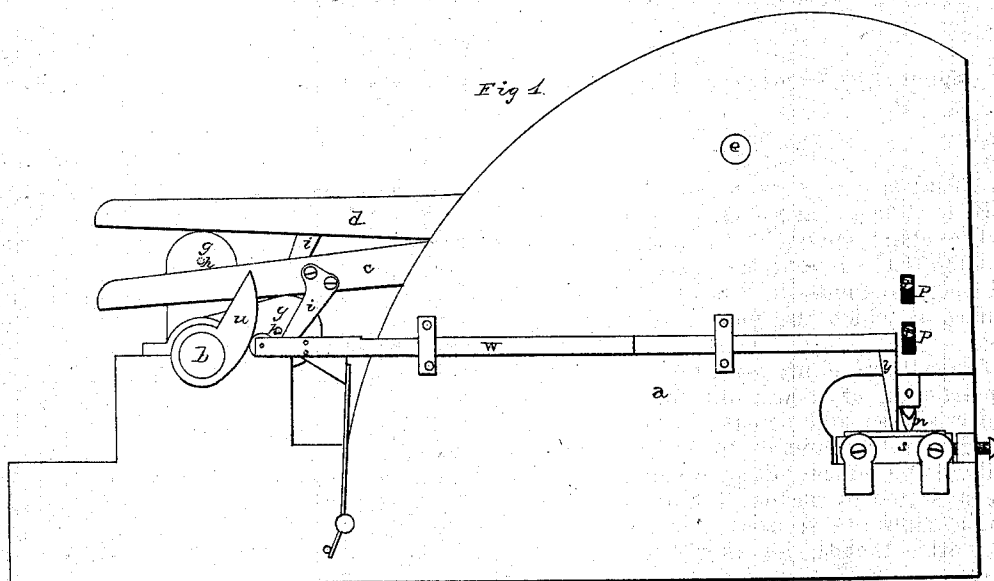


W. R. WILBUR.
Nut and Washer Machines.

No. 139,696.

Patented June 10, 1873.



WITNESSES.

Alex Davidson
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INVENTOR.

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UNITED STATES PATENT OFFICE.

WILLIAM R. WILBUR, OF CLEVELAND, OHIO.

IMPROVEMENT IN NUT AND WASHER MACHINES.

Specification forming part of Letters Patent No. **139,696**, dated June 10, 1873; application filed March 8, 1873.

To all whom it may concern:

Be it known that I, WILLIAM R. WILBUR, of Cleveland, county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Nut and Washer Machines, of which the following is a specification:

The nature of my invention relates to the construction of a machine for making nuts and washers; and consists in two levers carrying suitable punches for making the holes and cutting off the nut or washer, and which are operated by means of a driving-shaft, to which cams are secured in such relation to each other that the levers will be operated alternately. It also consists in a cam-lever, or its equivalent, having a suitable device secured to its end for cleaning the chips from the face of the die. It also consists in the general arrangement and combination of parts, which will be more fully set forth hereafter.

Figure 1 is a side elevation of my machine. Fig. 2 is a front-end view of the same. Fig. 3 is a plan view of the bed-plate and dies.

a represents the frame, of any suitable size or construction, having the driving-shaft *b* journaled in its rear end and the two operating-levers *c d*, to which the punches are secured, pivoted at the point *e*. To the driving-shaft are secured three cams, two of which, *g'*, for operating the levers, are placed at about right angles to each other, and have a small stud or projection, *h'*, secured to their side, which, as the cams revolve, strike against the downwardly-projecting arms *i* and draw the levers down at their rear ends and raise them at their front, so as to elevate the punches after operating on the nuts or washers being made. To the front ends of the levers are secured the slides *l*, dovetailed behind and held in position by the guides or ways *m*, and which have suitable punches *n o* secured to them by means of the set-screws *q*. In the side of the frame are formed one or more slots, *p*, in which

the stops *r* secured to the slides *l*, move so as to regulate the depth to which the punches shall operate. Secured to the front end of the frame, and held and adjusted in position by means of set-screws, or any other suitable devices, is the bed-plate *s*, in which the dies *t v* are placed, and adjusted in a similar manner. Secured to the driving-shaft *b*, outside of the frame, is a third cam, *u*, which operates the spring bar *w*, having any suitable device, *y*, attached to it, which is made to sweep back and forth over the die *v*, so as to clean away the chips after each action of the punch *o*.

I take a bar of suitable size and thickness, either hot or cold, and first punch one, two, three, or four holes in it, according to the size of the nut. This bar is then fed under the punches until it reaches the square one, *o*, when the nut or washer is cut off, and the round one, *n*, for making the hole, descends and punches the hole for another nut. As the bar is then fed forward there will always be one or more holes between the punches, and thus a strain upon the bar is prevented, which would otherwise crack or split it. In making the dies operate alternately, the squaring-punch, which cuts the nut off, descends and then gets out of the way before the other punch touches the metal.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The shaft *b*, cam *u*, spring-bar *w*, and cleaning device *y*, substantially as shown and described.

2. The shaft *b*, levers *c d*, cams *g*, studs *h*, and arms *i*, when combined with the slides *l*, and punches *n o*, substantially as specified.

In testimony that I claim the foregoing as my invention, I have hereunto affixed my signature this 3d day of March, 1873.

Witnesses: WM. R. WILBUR.

F. A. LARIBEE,
JEROME MCBRIDE.